

Review on Anti-Piracy Screening System

Prof. Nagarathna¹, Sanath Shantinath. Ankalage², Nama Sandeep³, Venu L⁴

¹Assistant Professor, Dept. of Electronics and Instrumentation Engineering, JSS Academy of Technical Education, VTU, Bengaluru, India

^{2,3,4}Dept. of Electronics and Instrumentation Engineering, JSS Academy of Technical Education, VTU, Bengaluru, India

Abstract - Privacy protection is an important aspect in this present era of technology and exploring information. The major devices responsible for this action are high advanced cameras and mobile phones and in recent times pen cameras. To overcome this problem different kinds of techniques are being introduced regularly like using modulation of light, watermarking, annoyance maximizing etc. Here the main challenge occurred till now is to find out the user who is capturing the information. For this we are planning on placing IR LED s behind the screen where the information is projected and since the humans cannot view the infrared rays which is being generated continuously throughout the display of the information we can protect the information from anybody who tries to record or pirate the information during the run of information on the screen which is done by the comprising of IR filters which cannot prevent the IR rays to interfere.

Key Words: Cameras, Mobile phones, water marking, modulation, infrared rays, piracy.

1. INTRODUCTION

In our updating lives every day the growth of Internet has brought a drastic change in terms of developing new devices. Internet is able to provide fast access to all types of copyrights available and also all kinds of information and media.

Piracy is usually referred as an unauthorized duplicate copyrighted content which will later be sold at lower price substantially in grey markets. The copy which is set to release finally may also be leaked from one of the team members in order to make money. Another common type is to record the film completely sitting inside the movie theatre and uploading them on websites and also prepare DVDs of the recorded material and sell them gradually in the streets.

Most of the high budget films which are released are made available easily within some days or few hours of release because of these above mentioned methods.

Hindering this piracy problem has always been a challenge and the most preferred priority for the movie theatres.

For this issue the markets around the world have taken serious policies and also through prosecution trying to find a solution to this movie pirating.

Copyright law protects the creative work of each individual and making unauthorized copies is a criminal offence for it brings losses to the creator who has invested in the making of the film. For this problem the staffs of the movie theatres are provided with night vision goggles to find out who may be recording the film which is being screened.

Instead of doubting every audience as a movie pirate, we can use an anti-piracy movie screening system in order to avoid pirating movies without any disturbance to other viewers

2. BLOCK DIAGRAM DISCRPTION

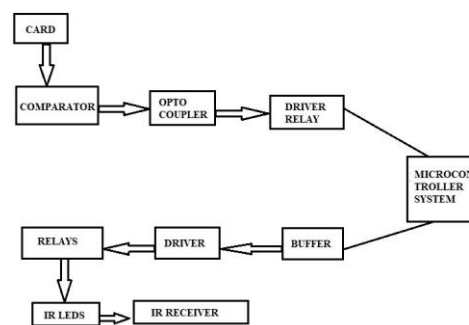


Fig.1 Block diagram of System.

Anti piracy screening system is the main solution for avoiding movie piracies around the like as shown in Fig1. We use a smart card in this case for the authentication purpose for the owner to operate the system.

We also use comparators and opto couplers for the second stage of authentication where the password entered for the microcontroller to get actuated and from that the IR LEDs placed behind the screen is are turned ON and starts to generate which will eventually happen through the driver and buffer circuits and then the IR receivers are placed next to the projector to receive the IR signals which are not visible to human eyes but affects the camera video clarity if tried to record from it.

3. LITERATURE SURVEY

Yuanchun Chen, Guangtao Zha [1] et al. proposed that the recent watermarking technologies are able to track the movie pirate, the video content which is viewed maybe affected and they will not be a major effect on the recorded

or pirated movie because the watermarks which are used for the purpose of avoiding piracy is actually invisible. This paper provides a new method of defeating the camcorder piracy by protecting the content using a new paradigm of information display technology known as the temporal psychovisual modulation (TPVM), which makes use of the differences between the eye perception of the human being and digital camera image-forming to stack an invisible pattern on the screen and the projector. Usually it is continuous integration of light field which are formed in human vision, while it will have a 'blackout' period in each sampling cycle when discrete sampling is used in the digital video acquisition. We can decompose a movie into display frames with specific patterns based on the above mentioned difference and then when broadcasted at high speed, the audience will not have any disturbance but the video frames captured by the camera will be highly repulsive.

Jeffrey A Bloom and Christos Polyzois [2] et al. has proposed that the major two domains movies and music piracies are different. But in this paper an interesting look a movie piracy and music piracy are discussed as we compare both of them but also which brings a potential impact on the Revenue because of the piracy of these two domains. There isn't any direct addressing of issues of politics, business, ethics, sociology, or copyright law, but the identification of relatively uncontroversial areas where technology, specifically digital marketing makes a major contribution for avoiding piracy.

Karthik.S, Abhishek.P [3] et al. has proposed that in recent years many countries around the world have created new laws based on anti-piracy which is usually done online and there are strict enforcement actions taken against the violators because of the major losses they create for the movie makers. So this raises a question among the people and the government upto what extent the antipiracy actions has been effectively been working in avoiding online piracy. This has become a challenging issue for the all the owners of the theatres because the major difficulty lies in capturing the behavior of the user and also the subtle effect of various underlying causes. In this paper we follow a system where the problem is tackled by examining two major antipiracy actions. We capture snapshots of Bit Torrent publishers at proper times relative to the targeted antipiracy event and use the trends in the number and the level of activity of these publishers to assess their reaction to these events.

Zhongpai Gao, Guangtao Zhai[4] et al. has proposed that the camcorder piracy has made a very big impact on the movie industry. As of till now even though many methods have been introduced to avoid piracy but there isn't any recognized regularly used technology of defending it which without any effect on the audience. This paper gives the idea of projecting the movie in a new way which is called temporal psycho visual modulation (TPVM). This of modulation technique exploits the difference in image formation mechanisms of human eyes and imaging sensors.

Since we use discrete sampling in digital video but the images formed in human vision is continuous integration of light. Hence this proposed prototype built on the platform of DLPR Light Crafter 4500TM serves as a proof of concept of anti-piracy.

J. Haitsma; T. Kalker [5] et al. has proposed a video watermarking scheme and also presented which is designed for future digital cinema format which can be used to while projecting movies in large screens in theatres. The watermark will be designed in such a way that it will have minimum impact on the quality of the video but will be still detectable after capturing the video with a handheld camera and also during the time of conversion like VHS, CD-Video or DVD format. They have used a proposed watermarking system which only exploits the temporal axis in order to obtain severe requirements, concerning visibility and robustness. According to the samples of the watermark, a Watermark is inserted by changing the mean of the luminance values of a frame. Watermark is detection is done by correlating the sequence of the watermark with extracted mean luminance values of a sequence of frames. Implementing the above mentioned algorithm, a demonstrator has been built which shows aforementioned requirements which can be met with the proposed scheme.

Manasa K B, Amulya S M [6] et al. has proposed that different techniques and strategies are being explored to overcome the problem of piracy and secure the digital content which is the present technology and for this some of the methods of avoiding piracy are spatiotemporal modulation of light, watermarking techniques, spatiotemporal modulation of light, watermarking techniques maximizing annoyance and temporal effects. In this paper we take the help of RFID technology for identifying the pirates who are trying to record the movie in a theatre. The RFID will contain the unique information which helps in tracking the information to reveal that one person who is responsible for the piracy action. Since this is also a challenging issue to actually capture the user behavior we can tackle this problem by embedding infrared LEDs behind the screen through which IR rays will be generated which will help to detect piracy by objecting the record action without proper clarity.

Savita.C.H, Kajol R D [7] et al. has proposed that the theft of film has been a big profound impact in a wide range which affects the economy which is one of the major crime in almost all the countries. The major source for this problem is by using camcorders by which the movies are recorded inside the theatres and then sold on other websites and also in the grey markets. Many types of new techniques based on spatiotemporal modulation of light, watermarking techniques, maximizing annoyance and temporal effects are used to secure the cinema content which is digital in the present world. This paper majorly deals with a different kind of projection technique to avoid the movie piracy in theatres. This paper aims at defeating piracy which takes the help of

camcorder by deeply degrading the visual quality of the recorded movie without disturbing the audience by making the interference signals invisible for them and then Infrared emitters are installed completely around inside the movie theatres and then create disturbances like glares on the recorded frames.

Gouri Raut, Kajal Bakade[8] et al. has proposed the idea of maintaining the safety and security of people by developing an application from which spy cameras which try to record information can easily be detected and also not only this but also the traitor's identity and the particular location of the person is made to send to the concerned authorities. This application can be used not only in movie theatres but also in courts and other places where cameras are not allowed. This paper the author has proposed a different kind of system for recognizing and deactivating advanced cameras in photography restricted regions. This procedure will kill the camera once its found. Picture handling is used for identifying camera's focal point. An infrared light will be coordinated towards the focal point which will disturb and twist the picture by overexposure if a camera's focal point is found i.e., in other words if someone tries to record information. From this, solid lessening in the nature of picture will occur when infrared light is coordinated. It is innocuous to the camera client and will not meddle with the activity of the camera.

Abhishek Kumar B A, A Pranith[9] et al has proposed a solution to overcome the problem of piracy by using a technique in T V remote, that is the use of infrared light. We know that Infrared light is an electromagnetic radiation which has a longer wavelength than that of visible light and others like UV rays, X rays, Gamma rays. For the reason the infrared rays are invisible to the human eyes but the IR radiations are visible to the mobile phones and other types of cameras. Hence using this technology of generating infrared light in movie theatres we can reduce the piracy. RFID tags are used in this paper for the security purposes and to turn ON the screen.

Abhigya Bhatnagar, Ahire Vivek [10] et al. has proposed a solution for this problem of movie piracy. This system which is proposed makes the use of image processing techniques over an image acquired from a camera placed at some suitable location over the movie theatre screen. The similar type of system can be used to protect the confidentiality and exclusivity of programs which are held in presentation halls and auditoriums.

Rohit M.N , Abishek K.A[11] et al. has proposed that the major source of movie piracy is the camcorder piracy where movies are recorded with portable devices like cameras and mobile phones and are later sold at lower prices on internet and grey markets. We know that different techniques- have been introduced like spatiotemporal modulation of light, watermarking techniques, maximizing annoyance and temporal effects. This paper deals with a projection technique in movie theatres to defeat the camcorder piracy

where we will obtain a degraded visual quality of the recorded movie while there will be complete interference of infrared signals which are invisible to the audience. Infrared emitters will be installed in movie theatres which will interfere with the camera action and glares will be created on the recorded frames. And also even if the visually degraded video is uploaded on the internet for its audio purpose then with a person identification system we can track the person who did it so. We know piracy is a punishable offence, this kind of system brings awareness for the people who tries to record video.

4.CONCLUSION

This paper mainly deals with the notion of avoiding piracy which is a setback for visual media. The earlier methods of tackling this problem was quite expensive and quite ineffective. By the use of infrared rays, the problem of piracy can be controlled in a more efficient way.

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BIOGRAPHIES



Assistant Prof. Mrs. Nagarathna
Professor, Dept. of Electronics and Instrumentation Engineering,
JSS Academy of Technical Education, Bengaluru



Mr. Sanath Shantinath Ankalage
Bachelor of Engineering,
Electronics and Instrumentation,
JSS Academy of Technical Education, Bengaluru



Mr. Nama Sandeep
Bachelor of Engineering,
Electronics and Instrumentation,
JSS Academy of Technical Education, Bengaluru



Mr. Venu L
Bachelor of Engineering,
Electronics and Instrumentation,
JSS Academy of Technical Education, Bengaluru